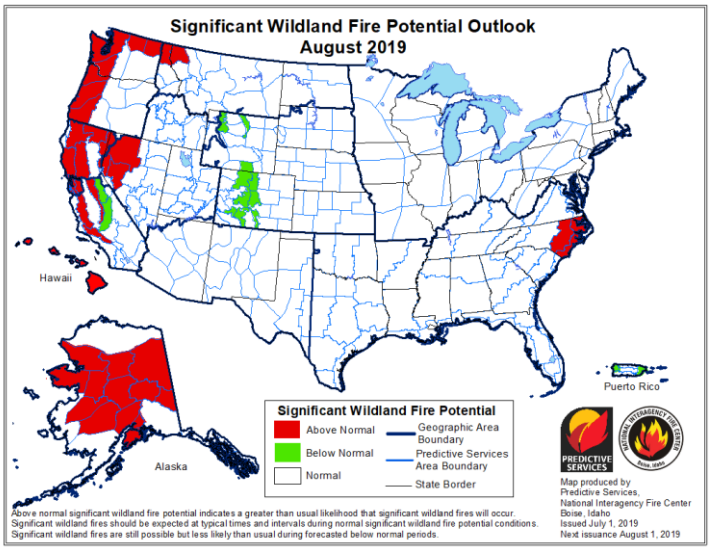
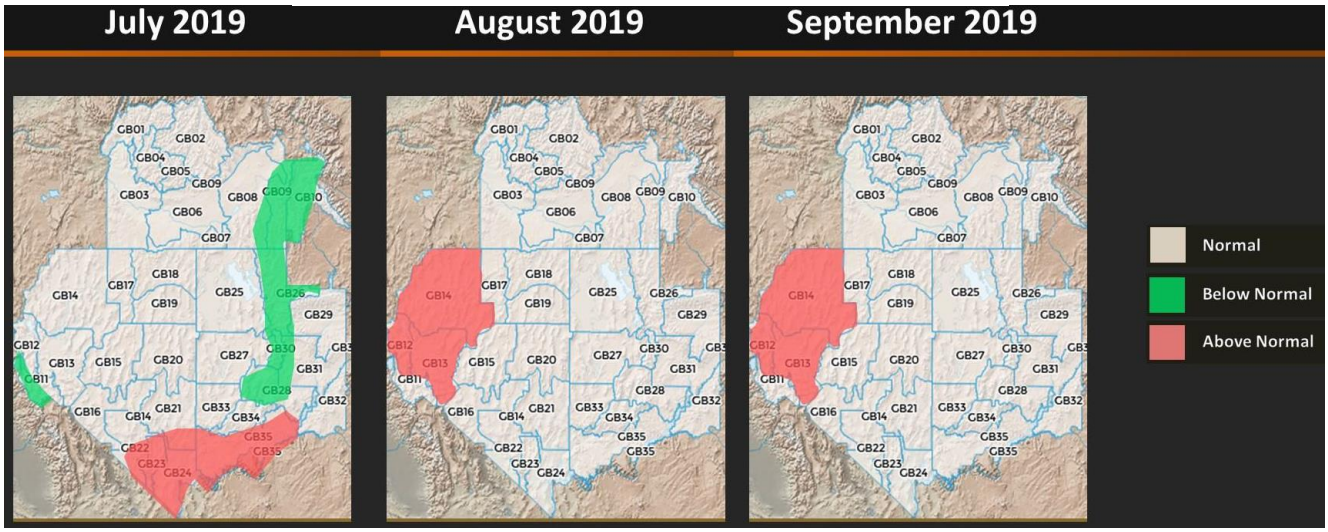
July 2019 Wildland Fire Outlook

July 5, 2019





(Top) NIFC - Significant Wildland Fire Potential August 2019 (issued July 1). (Bottom) Large Fire Potential July through September 2019 (issued July1 by Great Basin Coordinating Center. GBCC Monthly Outlook).

SUMMARY

The fire season outlook for the Teton Interagency Dispatch area reflects the continuing effects of a wetter than normal winter and cooler than normal early season conditions. The outlook for the Great Basin Geographic Area indicates a mix of normal and above/below normal fire activity in the geographic area. Outlooks (as of July 1) in the Teton Interagency response area indicate **potential for below-normal fire activity for July and normal fire activity for August and September.** During a normal season, Bridger-Teton National Forest will have 67 fires for 3290 acres (40-year average from 2016) and Grand Teton National Park will average 11 unplanned fires for 1858 acres (based on a 20-year fire history, 1997-2016).

CLIMATE AND FUELS OUTLOOK

1. 14-day and 60-day Temperatures

WARMER SPRING into EARLY SUMMER. May and June were cooler than normal in the Teton Interagency Dispatch area.

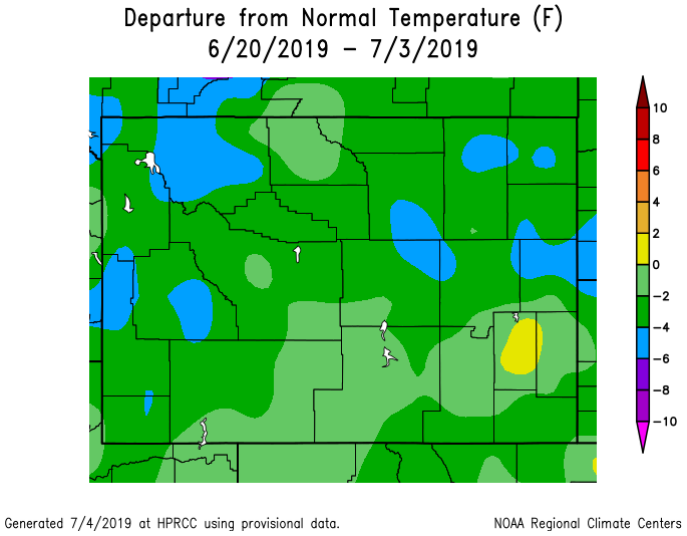


Figure 1a. 14-Day Departure from Normal Temperature, Wyoming, ending July 4, 2019. https://hprcc.unl.edu/products/maps/acis/hprcc/wy/14dTDeptHPRCC-WY.png

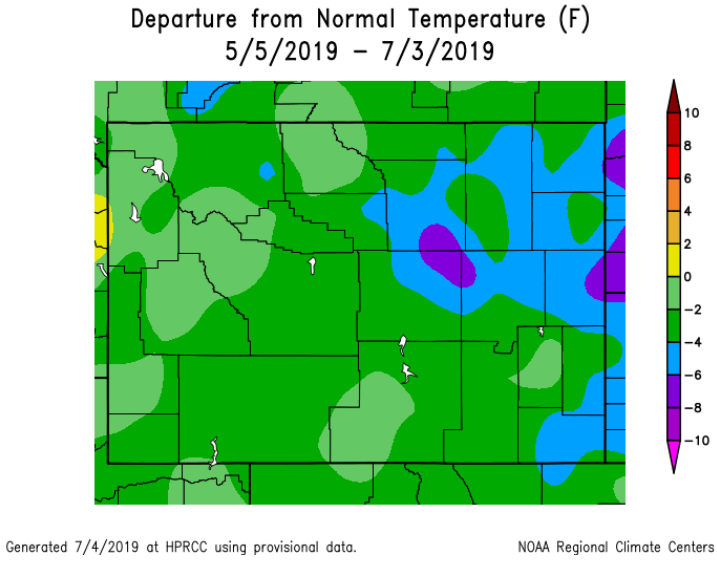


Figure 1b. 60-Day Departure from Normal Temperature, Wyoming, ending July 4, 2019. https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png

2. 30-day, 90-day, and Year-to-Date Precipitation

Area precipitation tracking for the water year to date (October through June) reflects a wetter than normal pre-season and spring, with the exception of drier-than-normal precipitation for the past 30 days for most of the Dispatch area.

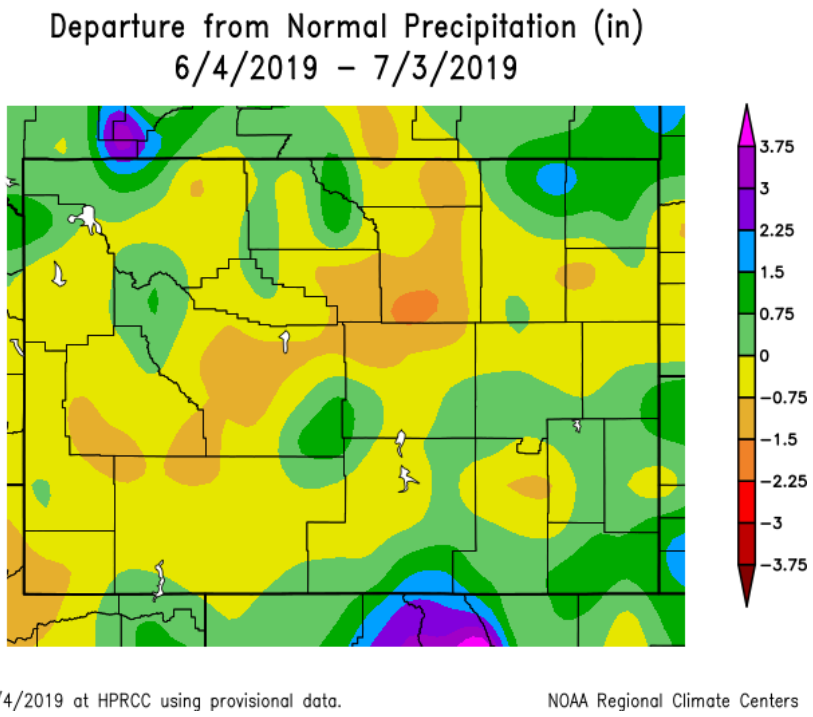


Figure 2a. Wyoming, Current Precipitation – Departure from Normal -- for June (the past 30 days ending July 4, 2019), Western Wyoming exhibits below-normal precipitation compared to normal for the prior 30 days. Wyoming in general is drier than normal to the central-west, southwest and center of the state, and wetter than normal in the far northwest and southeast/northeast regions. HPRCC - 30 Day Departure from Normal - Wyoming- Permalink.

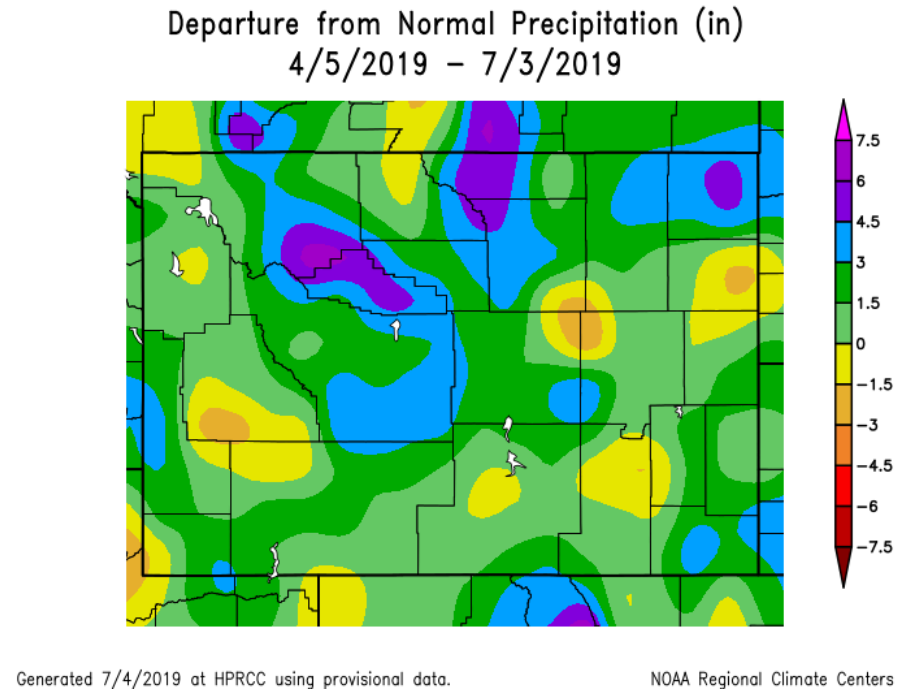


Figure 2b. This moisture pattern for the Teton Dispatch area is also wetter than normal for the past 90 days of *Departure from Normal Precipitation* for Wyoming, with below-normal precipitation in some sections of the Dispatch area. HPRCC - 90 Day Departure from Normal - Wyoming- Permalink

Precipitation tracking at the Moose weather station (manual) and the nearby Moose 1 NNE, the regional long-term climate station in the Dispatch area, are representative of long-term trends and specific moisture in lower elevation sites in Grand Teton National Park and some North Zone sites. This site recorded three of nine months above average for the specific month (for 217% of normal for those three months in total), with the six months below average (for 62% of normal for those six months in total. Though Moose has received 117% of normal moisture for the water year to date (similar to last year at this date), the last two months averaged 73% of normal.

Monthly		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	YTD
Precipitation	1987-88	0.09	1.27	2.59	2.37	0.75	0.99	1.12	1.61	0.75	11.54
(inches)	1999-00	0.08	0.67	2.03	2.27	5.04	1.03	0.4	1.38	0.59	13.4.9
	2016-17	5.25	1.7	5.27	3.39	5.88	2.03	2.79	0.74	2.33	29.38
	2017-18	1	3.85	1.34	1.62	2.15	2.89	3.03	2.74	2.48	21.1
	Normal	*2.58*	*1.82*	*1.62*	*1.49*	*1.88*	*2.58*	*1.82*	*1.62*	*1.61*	*17.78*
	2018-19	**1.08**	**2.82**	**1.21**	**1.56**	**7.83**	**0.78**	**3.04**	**1.5**	**1.06**	**20.88**
% NORMAL	1987-88	6%	60%	102%	92%	40%	63%	75%	84%	47%	65%
	1999-00	6%	32%	80%	88%	267%	66%	27%	72%	37%	76%
	2016-17	357%	64%	197%	131%	323%	125%	187%	39%	145%	165%
	2017-18	68%	146%	50%	63%	118%	178%	203%	146%	154%	119%
	2018-19	73%	107%	45%	60%	430%	48%	204%	**80%**	**66%**	**117%**

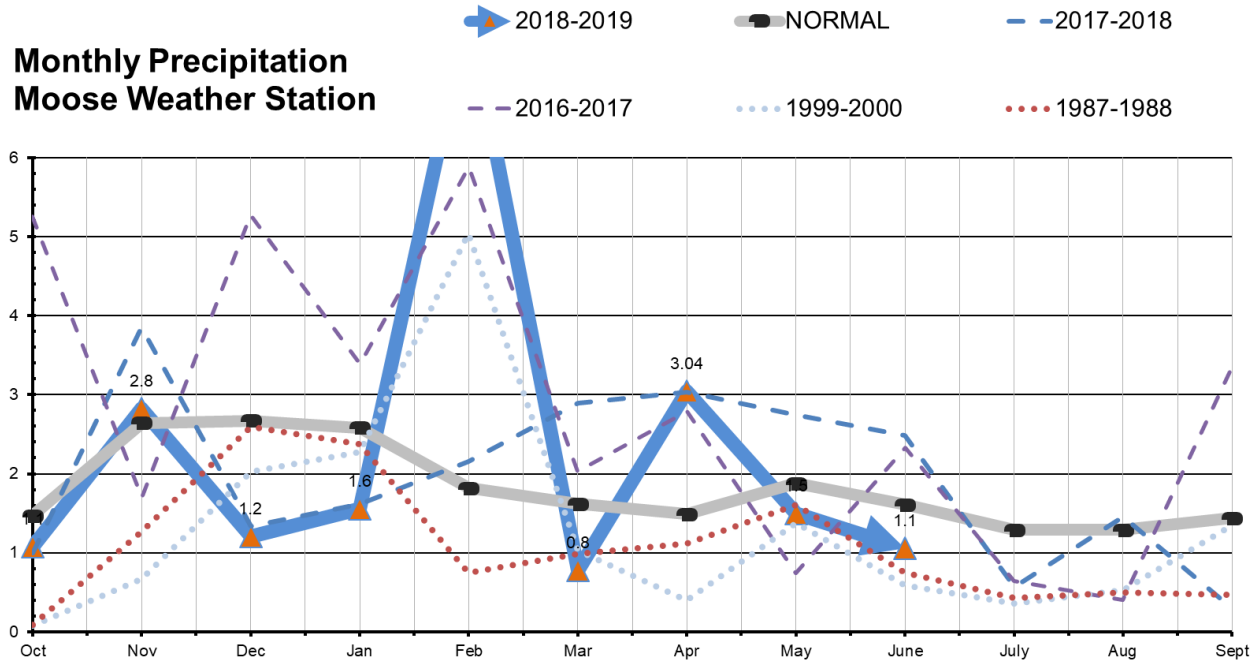


Table 2c and Graph: Precipitation at Moose Weather Station (Grand Teton National Park).

3. Drought Monitor

The current drought map for the U.S. West shows 13% of the West exhibiting some level of drought conditions, compared to 70% exhibiting some drought conditions at this time last year. In comparison, less than 1% of Wyoming has no drought conditions, compared to 16% last year and 79% in 2017 exhibiting drought conditions at this time. The western edge of the Dispatch area is experiencing abnormally dry conditions.

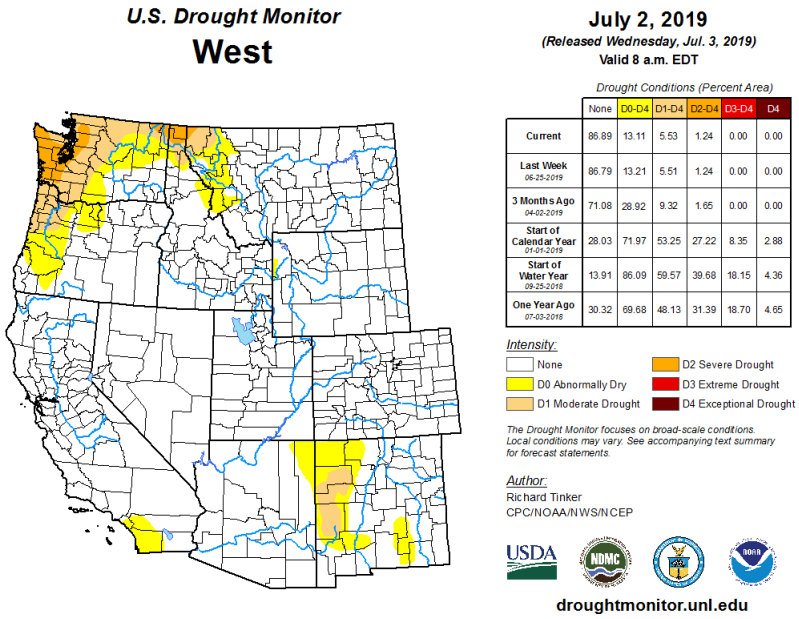


Figure 3a. U.S. Drought Monitor – West.
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West

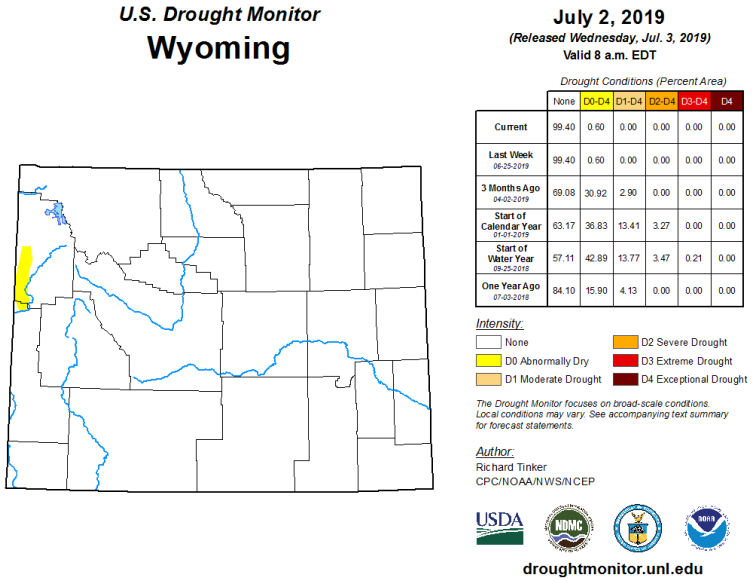


Figure 3b. U.S. Drought Monitor – Wyoming.
http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?WY

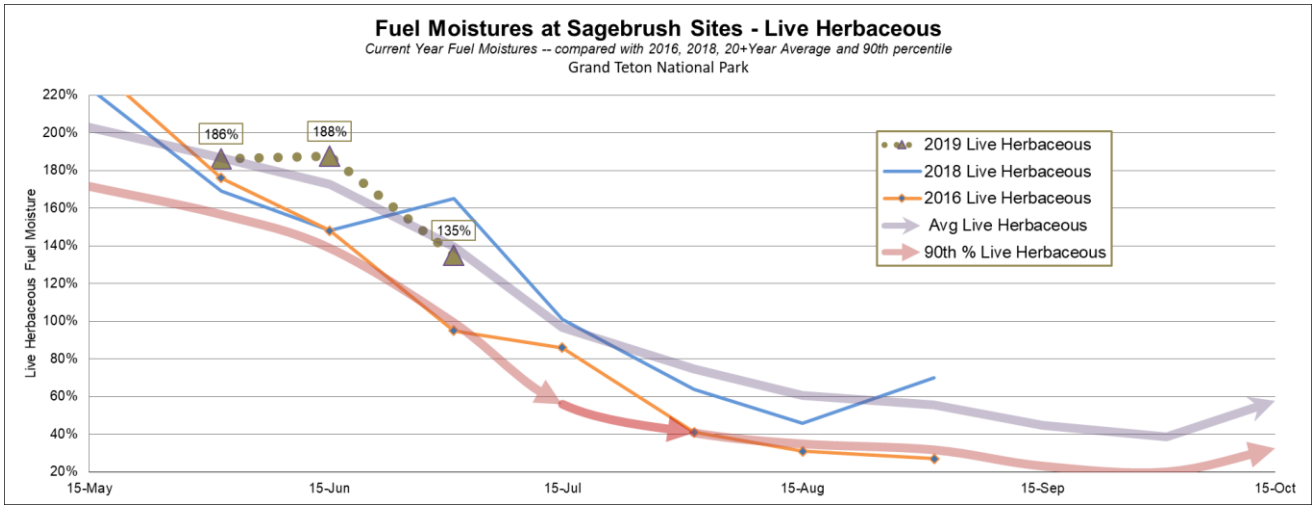
4. Fuel Moisture

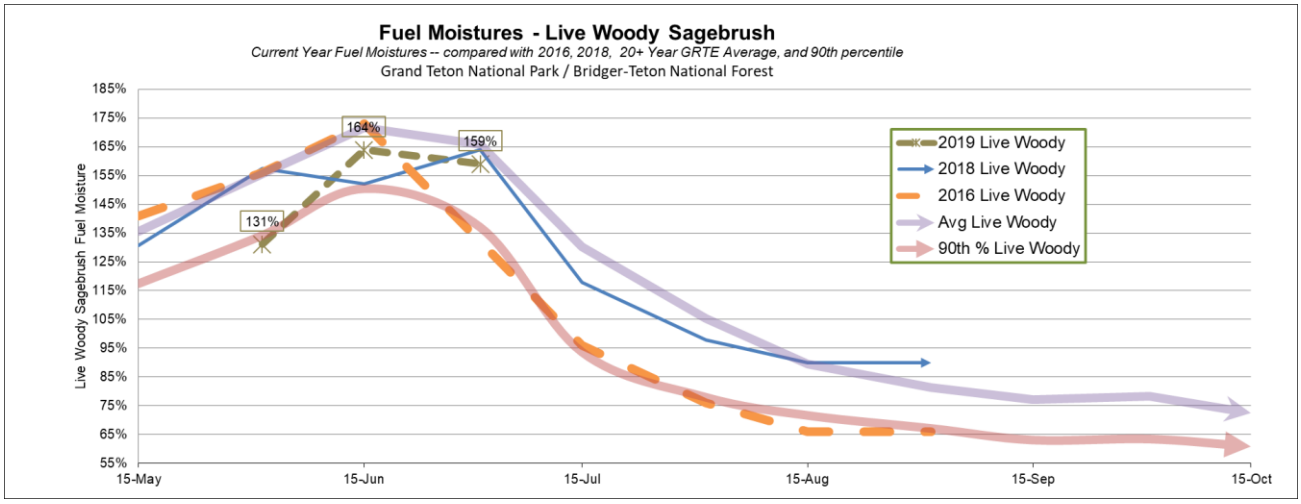
Fuels are generally normal for early July.

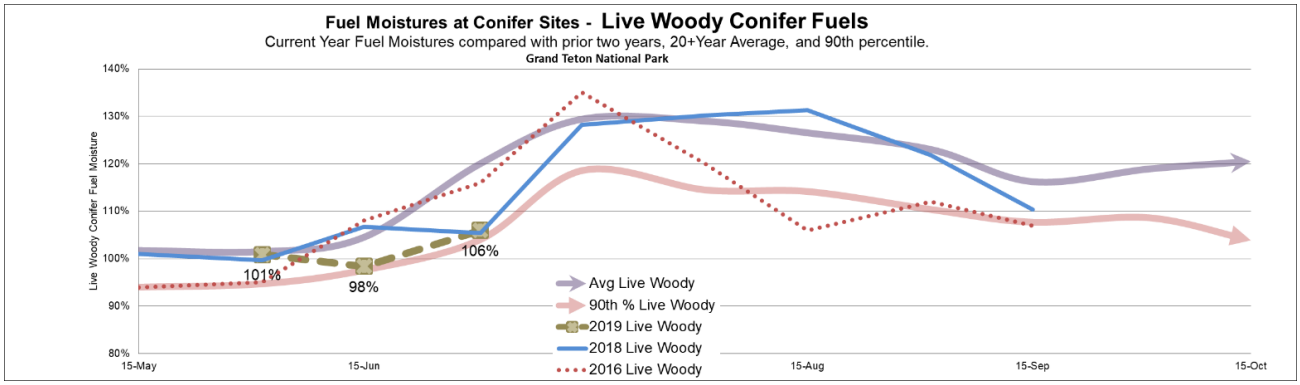
- **1000 Hour Dead Fuel Moisture:** At Bridger-Teton NF sampling sites, the 1000 hour fuels (heavy dead and downed logs) for mid- to late June averaged **23%**, and at Grand Teton the 1000 hour fuels averaged **24%**, which is average for the park for July 1.
- **Live Woody Fuel Moisture / Conifers**: Fuel moisture ranged from **78-110% (average 94%)** at Bridger Teton NF sampling sites, and from **84-124% (average 106%)** at Grand Teton sampling sites. For Grand Teton, this is similar fuel moisture for 2018 and is near the 90th percentile for this date.
- **Live Woody Fuel Moisture / Sagebrush:** At sagebrush sites in Bridger-Teton NF, fuel moisture averaged **214%** (Wyoming Big and Silver Sagebrush), and in Grand Teton NP averaged **159%** (Wyoming Big Sagebrush), which is trending with normal conditions.

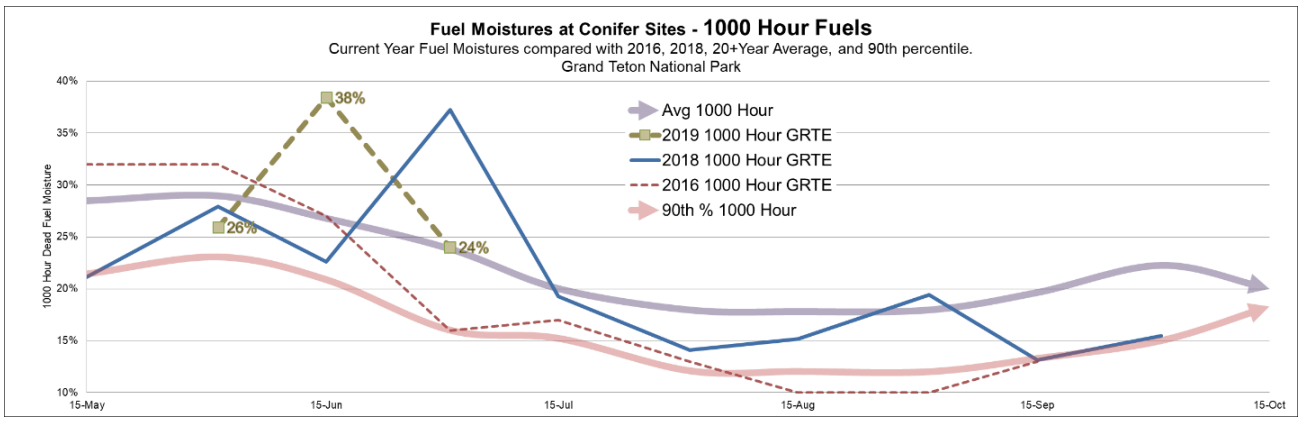
Additional fuel moisture data is available at the National Fuel Moisture Database: Current Fuel moistures in Bridger-Teton NF and Grand Teton NP.

At long-term sampling stations in Grand Teton National Park, the growing season opened with cooler though drier than average conditions after a wetter than normal winter. Early-season fuel moistures are now beginning to moderate toward normal ranges in both sagebrush and forest sample sites in the park (see charts below), with the exception of live-woody conifer fuel moistures, which may be drier than normal due to changes in green-up dates and track similarly to 2018 season. In that season, the drier-than-normal conifers added moisture in the first half of July.









5. Oceanic Niño Index (El Niño / La Niña / ENSO-Southern Oscillation)

BACKGROUND: The Oceanic Niño Index (ONI) (http://ggweather.com/enso/oni.htm) offers a streamlined tool for tracking El Niño (warm) and La Niña (cool) events in the tropical Pacific.

CURRENT STATUS: **El Niño is predicted to persist** through the Northern Hemisphere summer 2019 (66% chance), with lower odds of continuing through the fall and winter (50-55% chance). Monthly updates are at http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/. Potential impacts for the region include a higher probability of a drying trend in mid- to late autumn if the El Niño conditions occur.

6. Season Temperature and Precipitation Outlooks

For our region, the 30- and 90-day temperature outlook (left) calls for normal to above-normal temperatures for July through September. The precipitation outlook (right) indicates a higher probability for above normal moisture for the next three months.
http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif.

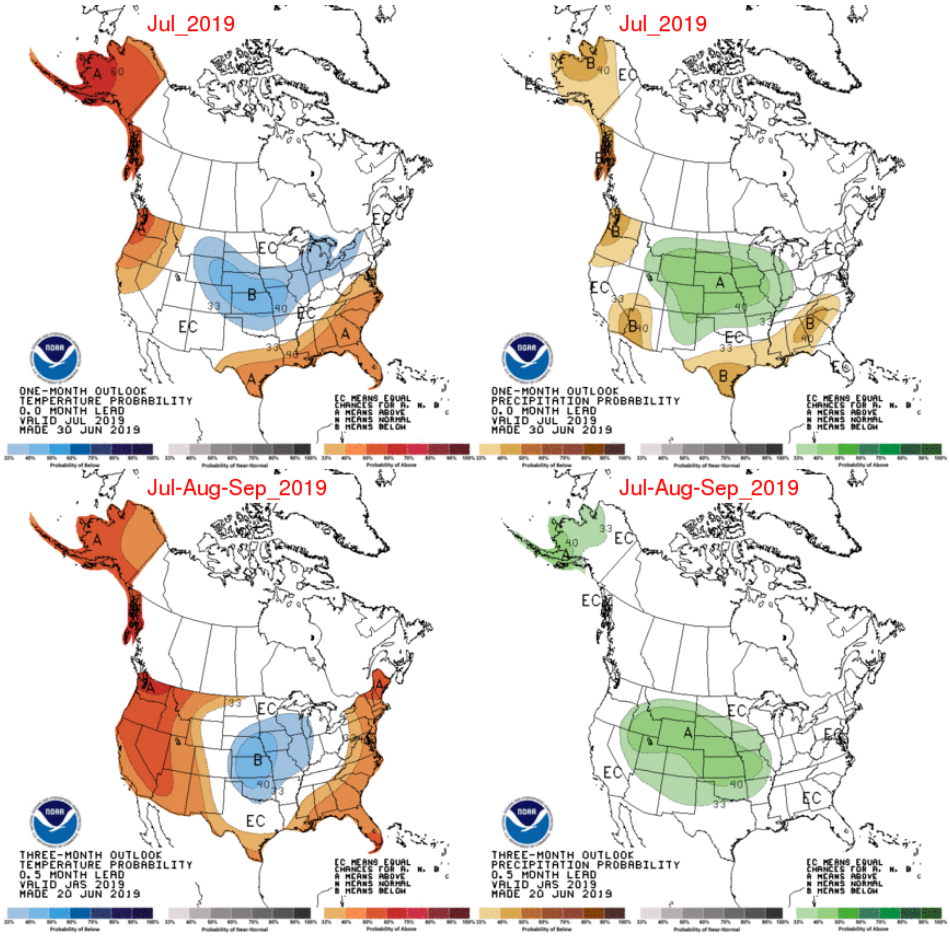


Figure 6: July and July through September, 30- and 90-day Outlook.

GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Great Basin Geographic Area. Fire seasons in our zone also track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share common trends of fire activity. The season outlooks excerpted below support an outlook for normal fire activity in the Teton Interagency Dispatch area, with potential for above-normal fire activity in July in the eastern Great Basin, transitioning in August to above normal fire activity in the northern and western areas of the Great Basin Geographic Area.

Excerpts of National and Regional Outlooks from "National Wildland Significant Fire Potential Outlook" (July 1, 2018, NIFC Predictive Services). http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National - Weather and Climate Outlooks:

Latest sea surface temperature anomalies across the equatorial Pacific Ocean indicate that the weak El Niño continues but remains very weak. The depth of the warm water is not as deep as it was previous weeks and it shows a bit of cooling on its eastern flank near Ecuador. Latest forecast data suggests a continuance of the marginal conditions through the fall months as sea surface temperature anomalies remain just below +.5

degrees Celsius. Latest data from the models introduces uncertainty into the event beginning mid-autumn as the various model solutions begin to diverge.

Medium to long range model data suggests overall average conditions are expected inland from the Pacific Coast through late summer into early fall. Some data suggests the precipitation amounts received could be above average across eastern portions of the Great Basin, Northern Rockies, and Central Rockies. West Coast states will likely see overall warmer than average conditions and below average precipitation. In Alaska, long-range outlooks suggest a continuance of warmer than average conditions along with a higher probability for above average precipitation, especially across the state's interior. It appears that the overall convective pattern will continue into July before the late summer rains begin to replenish fuel moisture levels

Great Basin:

Below Normal significant large fire potential is expected across the eastern Mountains of Utah and the eastern slopes of the Sierra in July while Above Normal large fire potential will develop across the southern boundary of the region along the Arizona Strip. Above Normal large fire potential is expected in August and September in the middle and lower elevations of western Nevada. Elsewhere expect Normal significant large fire potential.

Typically, hot and dry conditions are expected for the first week of July. There could be a small surge of subtropical moisture into southeastern Utah with the monsoon, but most areas should see little or no rain other than from isolated convection over the mountains. The ongoing, occasional trough passages resulting from systems passing by to the north should start decreasing in strength and frequency, but should still be significant enough to prevent a full-blown monsoonal pattern from moving into the southern portions of the region by mid-July. Thus continued the elevated fire risk for southern areas into July. Expect moderate westerly wind events to still affect many areas into early August, until the 4-Corners High can develop and become firmly entrenched.

Fuels in all higher elevations are still very moist. Unusually extensive snow-cover still exists above 8000 feet, especially on north to east aspects. Below that, live fuels are quite green with live fuel moisture levels running about a month behind schedule. Normal to Below Normal fire potential is expected in these areas at least through July.

Lower elevations have seen grasses cure out in most areas below 5000', except for northeastern Nevada and parts of eastern Idaho and western Wyoming where some greenness remains. Even in areas that have cured out, the brush fuel moisture is running about a month slower than normal. While fires in the 100-300 acre range have occurred in some of these grassy areas, the fires stop abruptly when they reach the brushy fuels.

Fine fuel loading is well above normal in many lower elevations, and in the far south not only have the grasses cured out, but the live fuel moisture values will be falling rapidly with the upcoming hot and dry conditions expected in early July. When the live fuel moisture in the brush stops becoming an inhibitor of fire spread, large fire potential will quickly increase in July. A delayed monsoon will allow for further drying as well. In areas that have a heavy crop of fine fuels, Above Normal significant large fire potential is expected, especially in August and September. Fire potential in southern areas will abate by late July with the arrival of the monsoon.

CURRENT FIRE ACTIVITY

Teton Interagency Dispatch Center

Wildland fire activity is light and comparable to other years with wet winters, with fewer early season acres burned than in recent years. This year's abandoned campfires to date – 49 -- is comparable to 2016, when TIDC had recorded 44 abandoned campfires by this date, compared to 25 abandoned campfires to date in 2017 and in 2018.

Year-to-Date Fire Activity for Dispatch Center response zones, July 4, 2019. (https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/sites/default/files/site-files/2019%20Fire%20Numbers%20and%20Stats.xlsx)

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	6	26.3	1	0.2	8	81	49

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Selected Sources

- Precipitation Tracking: https://water.weather.gov/precip/
- Climate Prediction Center, Three-Month Outlooks: *https://www.cpc.ncep.noaa.gov/products/predictions/90day/*
- *Outlook exceprts from "National Wildland Significant Fire Potential Outlook"* https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Predictive Services/Outlooks: https://gacc.nifc.gov/gbcc/outlooks.php.
- Teton Interagency Fire and Dispatch Center, Intelligence: https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/intelligence

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